

**DRAFT Chapter 173-485 WAC**

**Petroleum Refinery Greenhouse Gas Emission Requirements**

September 19, 2013 Stakeholder Review Draft

**WAC**

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**173-485-010 Policy and Purpose.** The purpose of this rule is to determine reasonably available control technology for emissions of greenhouse gases emitted by petroleum refineries located in Washington State. The emission standards in this rule were developed under the requirements of RCW 70.94.154.

**173-485-020 Applicability.**

This chapter applies to all petroleum refineries in Washington State identified in WAC 173-485-030(6)

**173-485-030 Definitions.**

The definitions of terms contained in chapter 173-400 WAC are incorporated into this chapter by reference unless defined differently here. Terms specific to this chapter are defined as follows:

- (1) **"Baseline greenhouse gas emissions"** means greenhouse gas emissions, reported to the United States Environmental Protection Agency (EPA) as required to comply with 40 CFR Part 98. The baseline greenhouse gas emissions are for calendar year 2010. If petroleum refinery operations

during 2010 were not representative of typical refinery operations, then the petroleum refinery must use its 2011 emissions. Emissions must be provided in units of metric tons of CO<sub>2e</sub>. Emissions attributable to the production of electricity from on-site cogeneration equipment are not included in the baseline emissions. Emissions attributable to the production of steam by the cogeneration equipment are included in the baseline emissions.

- (2) **"Carbon dioxide equivalent"** or **"CO<sub>2e</sub>"** means the number of metric tons of CO<sub>2</sub> emissions with the same global warming potential as one metric ton of another greenhouse gas.
- (3) **"Credit"** means the reduction of CO<sub>2e</sub> emitted resulting from one or more projects performed at a petroleum refinery during a reporting year. A credit is established in accordance with the criteria in WAC 173-485-060.
- (4) **"Greenhouse gases (GHGs)"** include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride
- (5) **"Energy efficiency standard"** means the EII® value representing the 50<sup>th</sup> percentile EII® of similar sized United States refineries, based on 2006 data and the EPA EnergyStar® calculation methodology.
- (6) **"Petroleum refinery" or "petroleum refineries"** means the following facilities, regardless of future changes in ownership or name:
  - (a) BP Cherry Point Refinery in Blaine, WA
  - (b) Phillips 66 Company Refinery in Ferndale, WA
  - (c) Shell Oil Company Refinery in Anacortes, WA,
  - (d) Tesoro Refining & Marketing Company Anacortes Refinery in Anacortes, WA, and
  - (e) U.S. Oil & Refining Company Tacoma Refinery in Tacoma, WA
- (7) **"Similar sized United States refineries"** means the petroleum refinery capacity categories established for EPA's EnergyStar® program for petroleum refineries.
- (8) **"Energy Intensity Index® (EII®)"** means the Solomon Associates proprietary petroleum refinery energy efficiency metric that compares actual energy consumption for a petroleum refinery with the standard energy consumption for a petroleum refinery of similar size. The standard energy consumption is based on an analysis of refining capacity as

contained in the database maintained by Solomon Associates. The ratio of a facility's actual energy consumption to the standard energy consumption is multiplied by 100 to arrive at the Solomon EII® for a refinery.

- (9) **"Typical refinery operation"** means a calendar year during which the petroleum refinery experienced no planned turnaround projects or unplanned upsets to unit operations neither of which resulted in cessation of the processing of crude petroleum oil for more than 30 days.

**173-485-040 Greenhouse Gas, Reasonably Available Control Technology Emission Standard.**

- (1) **Energy efficiency standard.** The owner/operator of each petroleum refinery subject to this rule shall meet the requirement to use reasonably available control technology (RACT) for greenhouse gas emissions by demonstrating the petroleum refinery has a calculated EII® equal to or more efficient than the EII® value representing the 50<sup>th</sup> percentile EII® of similar sized United States refineries, based on 2006 data and the EPA EnergyStar® calculation methodology. Compliance with the energy efficiency standard must be demonstrated as specified in WAC 173-485-050 in the annual report required in WAC 173-485-090. If a petroleum refinery is unable to or chooses not to demonstrate compliance with the energy efficiency standard in the first annual report required in WAC 173-485-090, the petroleum refinery shall meet the requirements of WAC 173-485-040(2) no later than October 1, 2025.
- (2) **Emission Reduction Requirement.** A petroleum refinery that does not meet the requirements of WAC 173-485-040(1), must:
- (a) no later than October 1, 2025 implement greenhouse gas reduction projects that:
    - (i) result in a cumulative annual emissions reduction equivalent to 10% of the facility's baseline greenhouse gas emissions (as CO<sub>2</sub>e), or
    - (ii) result in the petroleum refinery meeting the energy efficiency standard in WAC 173-485-040(1).
  - (b) demonstrate compliance with the emission reduction requirement as specified in WAC 173-485-060

**173-485-050 Demonstrating compliance with the energy efficiency standard**

Owners/operators of a petroleum refinery demonstrating compliance with the energy efficiency standard shall, as part of the annual report required in WAC 173-485-090(1), submit the following information:

- (1) The letter from Solomon Associates certifying that the petroleum refinery has a calculated EII® for the refinery that meets the requirements in WAC 173-485-040(1);
- (2) Identification of the calendar year of the petroleum refinery's operational data submitted to Solomon Associates to reach that conclusion. The calendar year used may be any year between 2006 through 2024; and
- (3) Confirmation that the operational data submitted to Solomon Associates for these calculations were reviewed and certified by a professional engineer licensed in the State of Washington, including the date the operational data was certified and the name and license number of the professional engineer who made the certification.

**173-485-060 Demonstrating compliance with the emission reduction requirement, Credits**

- (1) **Requesting credit.** Owners/operators of a petroleum refinery demonstrating compliance through the emission reduction requirement in WAC 173-485-040(2) shall submit, as part of each annual report required in WAC 173-485-090(1), requests for a credit against the greenhouse gas emission reduction requirement. A credit request must be based on specific projects that have been completed at the petroleum refinery. Each request must include the following information:
  - (a) An engineering description and analysis of the project, including the emission reduction and energy efficiency objectives for the project.
  - (b) A quantitative analysis of the project documenting the annual metric tons of CO<sub>2</sub>e emission reductions achieved as a result of completing the project.
  - (c) Information supporting the quantitative analysis including engineering assumptions, measurements, or monitoring data.

- (d) Economic analyses for the project, including the actual capital costs, estimated or actual operating costs, and estimated or actual cost savings resulting from the project.
  - (e) Requests for credits shall be submitted as part of the first annual report submitted after the petroleum refinery project has been completed.
- (2) **Processing a credit request** (a) Each request for credit submitted by the owner/operator of a petroleum refinery to the permitting authority shall be reviewed and certified by a professional engineer licensed in the State of Washington. The certification must contain the name and license number of the professional engineer who performed the review and certified the submittal.
- (b) Within thirty days after the receipt of a request for credit, the permitting authority may require the submission of additional information needed to review the request.
  - (c) Within thirty days after all required information has been received, the permitting authority shall propose to approve or deny the request for credit. Final approval or denial of a request shall be established through the issuance of a regulatory order. The regulatory order must be issued in accordance with the procedures of the permitting authority for issuing such orders. Each regulatory order issued to approve a request shall include both the quantity of greenhouse gas reduction credit awarded and any conditions necessary to support the validity of the credit award.
- (3) Improvements in the efficiency of existing electrical equipment or electrical equipment upgrades are not eligible for credits.
- (4) Greenhouse gas reductions for the replacement of direct fired or steam-driven equipment with electrical equipment will be credited based on the calculated difference between the greenhouse emissions reduced at the refinery and the greenhouse gas emissions calculated for the electricity required. The greenhouse gas emissions for electricity used will be the greenhouse gas emissions specific to the petroleum refinery's source of electricity.

- (5) Greenhouse gas emission reductions at the petroleum refinery approved for compliance demonstration purposes under this chapter may not be used for netting purposes under the prevention of significant deterioration program.
- (6) Greenhouse gas emission reductions at the petroleum refinery that occurred prior to January 1, 2010 are not eligible for credits.

**173-485-070 Monitoring.** (1) Each petroleum refinery must use monitoring measures that satisfy requirements for petroleum refinery owners/operators reporting greenhouse gas emissions to EPA as required by 40 CFR Part 98. Unless additional monitoring is required by the credit order issued under WAC 173-485-060(2)(c), these monitoring requirements, the 40 CFR Part 98 monitoring is considered sufficient for quantifying annual emissions for this regulation.

- (2) The permitting authority may require additional monitoring, recordkeeping, and reporting the permitting authority determines to be required to document compliance with a credit established through this regulation. The additional monitoring, recordkeeping, and reporting must be identified in the credit order issued under WAC 173-485-060(2)(c).

**173-485-080 Recordkeeping.** (1) All records used for preparing submittals to Solomon Associates or for preparing reports to the permitting authority shall be retained at least five years beyond the date of the last annual report required by WAC 173-485-090(2).

- (2) Records related to emission calculations and reports shall be provided to the permitting authority, upon request. The petroleum refinery owner/operator retains the rights to keep specified records and information confidential, as provided in RCW 70.94.205.

**173-485-090 Reporting.** (1) **Annual Reports.** Starting on October 1, 2014 and by October 1 of each year until October 1, 2025, unless compliance has been demonstrated on an earlier date, the owners/operators of a petroleum refinery

subject to this standard shall submit reports that include the following information:

- (a) Identification of the option the petroleum refinery intends to use to demonstrate compliance with this standard.
  - (b) Activities completed since the last annual report to reduce greenhouse gas emissions.
  - (c) Any changes since the last annual report regarding the compliance option utilized by the petroleum refinery.
  - (d) Baseline greenhouse gas emissions for the petroleum refinery, actual greenhouse gas emissions for the previous calendar year, total greenhouse gas emission reductions already credited to the petroleum refinery, and any emission reductions previously approved through regulatory order to comply with WAC 173-485-040(3), since the effective date of this regulation.
  - (e) All compliance documentation submittals required in WAC 173-485-050 or WAC 173-485-060(1), as applicable.
- (2) Annual reports must be submitted to the permitting authority until compliance has been demonstrated with either WAC 173-485-040(2) or (3). The owner/operator of a petroleum refinery shall identify in the annual report that the report is the final report that will be submitted to the authority.